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ARIZONA LABOR MARKET INFORMATION NEWSLETTER

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Unemployment Rate

Seasonally Adjusted
April*

ARIZONA	5.5%
Maricopa County	4.5%
Pima County	4.6%
UNITED STATES	5.4%

Consumer Price Index

U.S. - March 1988
Base = 1982-84

Wage Earner/Clerical Worker -	115.2
% Chg. Year Ago	3.8
All Urban -	116.5
% Chg. Year Ago	3.9

Phoenix - 1st Qtr 1988
Base = 1982-84

All Urban -	117.4
% Chg. Year Ago	3.1

Tucson - 1st Qtr 1988
Base = 1982-84

All Urban -	120.8
% Chg. Yr. Ago	3.0

*Preliminary

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— Moving People Toward Self-Sufficiency

What is Labor Productivity?

What productivity is and why it is important to everyone is the topic of this article. Productivity, in its simplest measure, is defined as real gross national product (GNP) per employee hour. In other words, it is simply the real GNP divided by the total number of hours spent on the job by the nation's workers. It is important to everyone because the rate of productivity growth determines how fast the well-being of the average citizen increases.

Before 1950, the United States had enjoyed superior growth of per capita real GNP compared to other industrialized nations (Sweden, Germany, France, Japan, United Kingdom, and Italy) which led to higher standards of living. But since 1950, the U.S. advantage has eroded. Between 1950 and 1973, the United States ranked at the bottom in terms of the rate of per capita GNP growth compared to the six other industrialized nations. The weak performance continued, and between 1973 and 1985 the United States ranked next to the bottom of that list. Nevertheless, U.S. per capita real GNP increased from $1,886 in 1870 to $15,302 in 1985. The slower growth in per capita real GNP was due to slower growth in productivity per labor hour compared to other countries. Indeed, the average growth rate of productivity in the United States was only 0.7 percent between 1973 and 1986 compared to 2.3 percent between 1960 and 1973. The following section will discuss the concept of productivity in more detail and the probable reasons for the slowdown of productivity in the United States.

Productivity, in general, shows the relationship between real physical output and the real input that goes into the production of goods and services in a given time period. The major inputs are labor, capital, and various raw materials as inputs or intermediate purchases. So output can be affected by changing the units of any of these inputs one at a time or all of these inputs simultaneously. The most common way to measure productivity is the amount of goods and services produced by a worker per hour.

Productivity is a competitive element because a business enterprise always wants to know how it can get more units of output per labor hour or per machine or per raw materials than its competitors. An increase in productivity will make the business more competitive.

There are several factors that can affect the productivity of a particular firm or business such as an increase in research and development, a higher investment in plant and equipment, and more applications of computer technology to all kinds of work. An increase in any one of these factors will enable the business to use its work force more effectively, meaning higher labor productivity.

At the national level, the U.S. Bureau of Labor Statitics (BLS) measures productivity for both single-factor and multifactor inputs. BLS has been providing "output per labor hour" or simply "labor productivity" statistics for many decades. It now provides measures for approximately 150 industries. Comparing those indexes can assess whether our labor is getting more or less productive over time. Multifactor productivity, on the other hand, relates output to the combined inputs of capital and intermediate purchases as well as labor. The movement of this index represents the changes in output not accounted for by the directly measurable inputs. The difference between the movement of the multi-factor productivity measure and the productivity of labor measure indi-

Table 1

GROWTH RATES IN
PER CAPITA REAL GNP

Country	1870-1913	1913-1955	1955-1973	1973-1985
United States	2.03	1.65	2.16	1.31
Sweden	2.05	2.25	3.26	1.48
Germany	1.62	1.41	4.00	2.02
France	1.46	1.26	4.35	1.59
Japan	1.50	1.31	8.13	2.94
United Kingdom	0.97	1.05	2.42	1.13
Italy	0.80	1.27	4.69	1.60

SOURCE: Robert J. Gordon, Macroeconomics, Table 19-1, 1987.

cates the impacts of the changes in capital services per hour and the intermediate purchases per hour on the productivity of labor per hour.

Movements in output per hour indexes indicate that many changes are taking place in the economy. Most importantly, it reflects changes in capacity utilizations; the composition of the labor force and technology; economies of scale; research and development; and the substitution of other factors for labor. The business cycle which directly affects the capacity utilization influences productivity even though the influence can be very temporary. Other factors, besides the cyclical factors, affect long-term productivity, which, in an economist's terms, is known as trend productivity.

Trend productivity growth can be defined as the growth that would occur if all resources in the economy were fully employed at desired levels. Trend productivity depends on several factors. Productivity would increase if better technological processes were used, more machinery was used, and the labor force was better skilled. In other words, trend productivity increases with technological progress, more capital per labor, and the growth of worker skills.

Because of cyclical factors, actual productivity growth can deviate from trend productivity growth over a short period of time. Therefore, trend productivity growth can be viewed as potential growth that the economy can have. Potential growth changes over the long run due to the factors mentioned above. The difference between actual productivity growth and trend productivity growth is known as cyclical productivity growth. Cyclical fluctuations in the economy cause businesses to employ resources at a lower rate than desired levels. These cyclical fluctuations in resource employment cause the actual growth path to deviate from the trend growth path.

The effect of the business cycle on productivity can be explained in terms of the fixed nature of some inputs in the short run. Since the stock of capital plant and equipment and the number of available skilled employees are not instantaneously adjustable, they remain to some extent fixed over the course of the business cycle. Thus, when product demand increases after a trough, firms are able to increase output more rapidly than capital and labor inputs, thereby inducing a swift rise in productivity. The opposite occurs during a contraction, giving rise to a procyclical pattern in productivity.

Trend productivity is measured by actual growth in high resource utilization from one year to another year. It is estimated that trend productivity growth slowed in the middle to late 1960s and slowed further after 1973. The estimates show that trend productivity, as measured by actual productivity in high resource utilization, grew at a slower rate from 1968 to 1979 than from 1948 to 1968. Within the 1968-to-1979 period, however, it is estimated that trend productivity grew at an annual rate of 2.1 percent from 1968 to 1973 and only 0.8 percent from 1973 to 1979. That is, average productivity was cut by more than half from 1973 to 1979. During the same period, trend productivity in the goods-producing sector also fell from 2.8 percent between 1968 and 1973 to only 0.8 percent between 1973 and 1979. Since the apparent slowdown in productivity was more severe after 1973, much attention was given by researchers to pin down the reasons for that slowdown, and recommendations were made for government action to stimulate productivity growth.

There were many factors that accounted for the apparent slowdown in productivity growth. Most important of them were:

1. The amount of capital per labor hour in the United States increased less rapidly after 1973 than before. It was estimated that capital per labor hour grew by 3.0 percent per year from 1948 to 1973, but after 1973, it grew only 1.75 percent per year. This fall in capital per labor hour resulted in a reduction in productivity growth increase.

2. Changes in the structure of the labor force in the 1970s. In general, productivity increases with experience for at least several years after workers enter the labor force; thus, increases in the number of inexperienced workers can reduce productivity growth temporarily. During the post-1973 period, an increase in the inexperienced labor force caused productivity growth to slow down.

3. The decline in research and development spending in the United States resulted in slower technological progress, which ultimately may have caused productivity growth to slow down.

4. The rapid increase in energy prices in 1973 also caused growth to slow down. The rise in energy prices was a one-time shock that reduced productivity, since it made the use of energy and thus machinery more expensive, leading firms to attempt to economize on energy use.

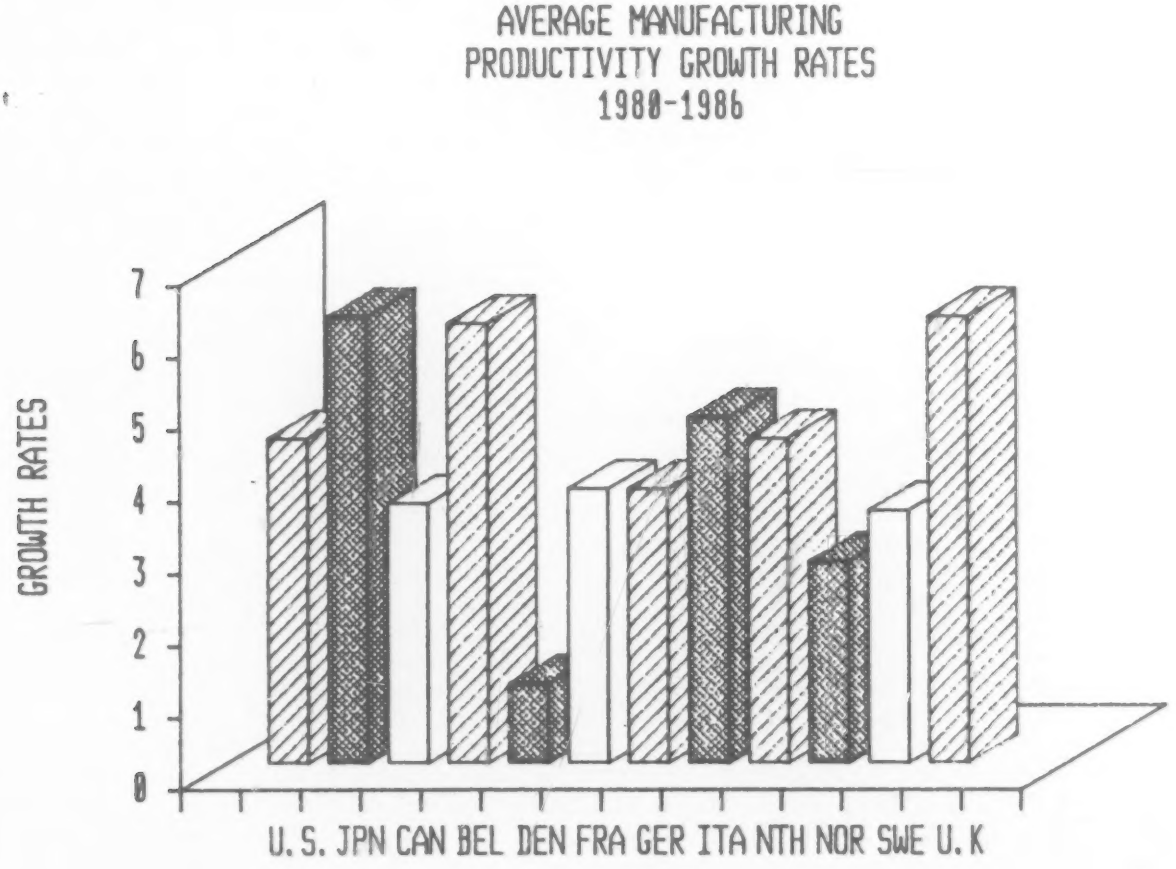
There are other factors which may have caused the slowdown. Michael Darby, in his studies on the U.S. productivity slowdown, found that the decline in trend productivity was due more to the price controls of the Nixon administration than to a true decline in trend growth. If, however, there was no decline in productivity, then any policy towards productivity growth would have been inappropriate.

Table 2

MANUFACTURING
PRODUCTIVITY GROWTH RATES
1980-1986

Country	1980	1981	1982	1983	1984	1985	1986	1980-1986
United States	0.0	2.2	2.2	5.8	5.4	5.2	3.7	4.5
Canada	-3.7	4.8	-4.5	7.2	10.8	2.5	-0.3	3.6
Japan	6.9	3.7	6.1	5.4	7.2	7.3	2.7	6.2
Belgium	6.5	7.0	6.0	9.6	4.2	3.0	2.6	6.1
Denmark	5.4	1.7	0.4	4.9	-1.3	-0.3	1.4	1.1
France	0.8	3.1	7.0	2.6	3.0	3.1	2.0	3.8
Germany	0.4	2.2	1.4	5.9	3.7	4.1	1.5	3.8
Italy	5.8	6.8	3.8	4.7	6.4	1.5	1.2	4.8
Netherlands	1.4	2.6	2.1	6.8	10.2	3.3	-0.3	4.5
Norway	-0.4	0.3	2.6	6.7	5.7	1.0	-0.6	2.8
Sweden	1.6	0.4	2.9	7.7	4.4	3.9	0.2	3.5
United Kingdom	-0.7	5.1	6.1	8.5	5.4	3.8	3.6	6.2

SOURCE: Monthly Labor Review, U.S. Bureau of Labor Statistics, March 1988.



PRODUCTIVITY IN RECENT YEARS

Growth rates in manufacturing productivity among industrialized nations are often compared to measure U.S competitiveness in the world. Table 2 reveals that between 1980 and 1986 Japan and the United Kingdom achieved the highest average manufacturing productivity growth rate of 6.2 percent. Among these 12 industrialized nations, the United States ranked third with 4.5 percent after Italy with 4.8 percent. However, in 1986 alone, the United States hit the top of the list in terms of labor productivity in manufacturing with 3.7 percent.

Now, a brief comparison of labor productivity will be made among different sectors of the U.S. economy in 1987. The current phase of the economic expansion, which started in November 1982, is now in its twenty-second quarter. During 1987, productivity in the business and nonfarm business sectors showed slight increases while manufacturing productivity rose more rapidly. Table 3 reveals percent change in annual productivity, output, hours, employment, unit labor costs, and hourly compensation from 1980 to 1987 for major divisions of the economy.

Business Sector

BLS recently reported revised productivity data for the fourth quarter and year of 1987. Productivity increased slowly in the business and nonfarm business sectors from 1986 to 1987. Productivity growth was more rapid in manufacturing than in the broader sectors, but was nonetheless slower than the preceding year's increase.

Business sector productivity rose at an annual average rate of 0.9 percent during 1987, and hours increased by 2.4 percent, whereas output in this sector increased by 3.4 percent. The business sector is the broadest sector for which productivity is measured, accounting for about four-fifths of GNP.

Business sector employment continued to grow during 1987, adding about 2.2 million jobs (2.6 percent). But the pace was slower than was typical for earlier quarters of the recovery. In all, over 11.3 million jobs have been added to business payrolls since the expansion phase of the business cycle began in early 1983. At 85.1 million, the business sector accounted for 83.3 percent of U.S. nonfarm wage and salary employment.

Hourly compensation increased 2.9 percent in 1987 compared with a 3.9 percent gain during 1986. The increase in 1987 was the smallest since 1955 when a 2.5 percent increase was recorded. Hourly compensation includes wages and salaries, supplements, and employer payments to employee benefit plans and measures employer costs rather than employee income. Unit labor costs are compensation expenses per unit of output, and thus are influenced by changes in both hourly compensation and productivity. Unit labor costs increased a modest 2.0 percent during both 1986 and 1987. Real hourly compensation declined 0.7 percent in 1987, compared with a 2.0 percent rise in 1986. This was the first drop since 1984 (when it fell 0.2 percent). The implicit price deflator for the business sector increased 2.5 percent in 1987, up from the 2.1 percent gain in 1986.

Nonfarm Business

Productivity in the nonfarm business sector increased by 0.8 percent during 1987, whereas output increased by 3.4 percent and hours of all persons increased by 2.6 percent. Employment rose by more than 2.5 million jobs (2.5 percent) in 1987, a cumulative increase of 12.5 million jobs (14.0 percent) over the recession low of 1982.

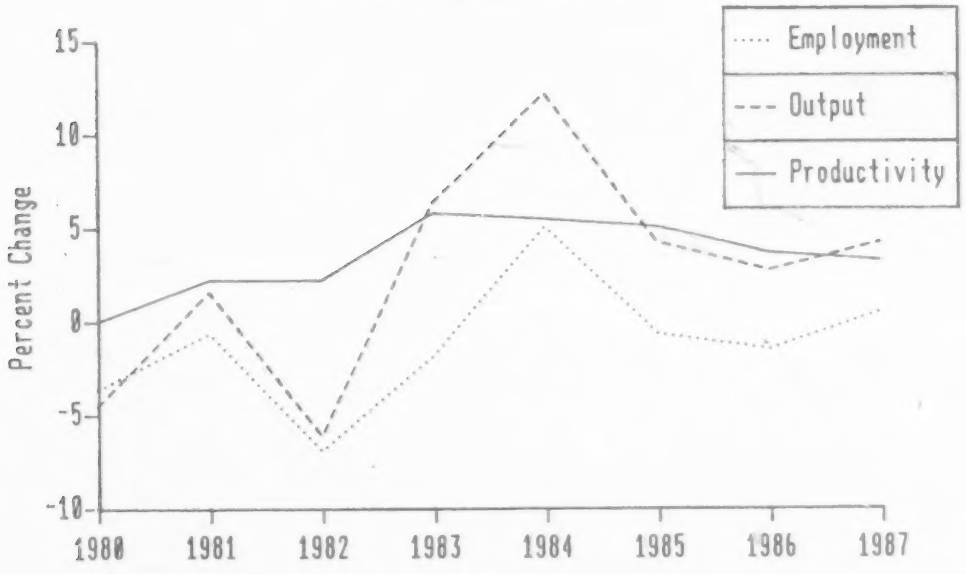
Table 3

ANNUAL PRODUCTIVITY AND RELATED MEASURES
UNITED STATES
PERCENT CHANGE, 1980-1987

	1980	1981	1982	1983	1984	1985	1986	1987
Business								
Productivity	-0.3	1.4	-0.4	2.7	2.5	1.8	1.9	0.9
Output	-1.1	2.1	-3.1	4.2	8.4	4.0	3.3	3.4
Hours	-0.8	0.7	-2.8	1.5	5.7	2.1	1.4	2.4
Employment	0.4	1.3	-1.9	0.8	5.6	3.4	2.2	2.6
Unit Labor Costs	10.9	7.7	8.3	1.4	1.5	2.8	2.0	2.0
Hourly Compensation	10.5	9.2	7.8	4.2	4.1	4.7	3.9	2.9
Nonfarm Business								
Productivity	-0.4	1.0	-0.6	3.3	2.1	1.2	1.6	0.8
Output	-1.2	1.7	-3.3	5.0	8.3	3.6	3.2	3.4
Hours	-0.7	0.7	-2.7	1.6	6.0	2.5	1.6	2.6
Employment	0.6	0.8	-1.7	0.7	4.8	3.2	2.1	2.5
Unit Labor Costs	11.0	8.3	8.4	1.0	1.8	3.2	2.2	2.0
Hourly Compensation	10.5	9.4	7.8	4.3	3.9	4.4	3.9	2.8
Manufacturing								
Productivity	0.0	2.2	2.2	5.8	5.5	5.1	3.7	3.3
Output	-4.5	1.6	-6.1	6.4	12.2	4.3	2.8	4.3
Hours	-4.5	-0.6	-8.1	0.6	6.4	-0.8	-0.9	1.0
Employment	-3.6	-0.6	-6.9	-1.8	5.1	-0.6	-1.4	0.6
Unit Labor Costs	11.7	7.3	6.2	-2.5	-1.9	0.2	-0.4	-1.9
Hourly Compensation	11.6	9.6	8.5	3.1	3.4	5.3	3.3	1.3

SOURCE: U.S. Bureau of Labor Statistics, News Release, USDL:88-53, February 4, 1988.

PRODUCTIVITY AND RELATED MEASURES
IN MANUFACTURING
PERCENT CHANGE, 1980-1987



Hourly compensation increased by a moderate rate of 2.8 percent in 1987. Yet, real hourly compensation fell 0.8 percent, the first drop in the annual measure since 1984 when it declined by 0.2 percent.

Unit labor costs increased by 2.0 percent in 1987 and 2.2 percent in 1986. The implicit price deflator for the nonfarm business sector rose by 2.4 percent in 1987, compared with 2.3 percent in 1986.

Manufacturing

Productivity in the manufacturing sector increased by 3.3 percent in 1987 compared with a 3.7 percent increase during 1986. Productivity gains in manufacturing have been substantially larger recently than in the more comprehensive business sector. Output rose by 4.3 percent, and hours of all persons increased by 1.0 percent. Employment grew by 118,000 new jobs (0.6 percent) in 1987. Since 1982, manufacturing employment has grown by 331,000 jobs (1.8 percent). Productivity grew in both durables and nondurables in 1987, but hours increased mainly in nondurables. Output also grew more rapidly in nondurable goods industries.

Hourly compensation of all manufacturing sector workers increased by 1.3 percent during 1987, the smallest gain ever recorded in this data series that began in 1947. When the increase in consumer prices is taken into account, real hourly compensation fell by 2.2 percent, the largest drop ever experienced. There has been little change in manufacturing real hourly compensation in about a decade. Unit labor costs fell 1.9 percent in 1987, compared with a 0.4 percent drop during 1986.

In summary, it is important to know the work force's productivity. It is important because the rate of productivity growth determines how rapidly the well-being of the average citizen increases. It is important because productivity growth is a competitive element. It tells us how competitive the United States is compared to other nations. Productivity growth also has implications for the nation's total spending. It determines whether society is providing increased resources each year to allow both private households and the government to spend more or less.

Jalal Ahmad

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The Arizona Labor Force in April

Arizona's unemployment rate remained steady at 5.5 percent in April as both the labor force and unemployment declined. The 8,300 loss in the labor force plus the 1,300 drop in unemployment indicate that the unemployed are either leaving the state or are no longer looking for work. Arizona's unemployment rate now hovers over the nation's rate of 5.4 percent.

April's statistics conveyed both good news and bad news for Arizona's economy. The loss of 200 wage and salary jobs was the state's worst March-to-April job growth performance on record. The decline resulted from the languishing construction industry and the winding down of the winter visitor season. The upswing in machinery manufacturing employment was the bright spot in an otherwise lackluster month.

Overall, the manufacturing industry added 600 new jobs. Unlike the first three months of the year when growth mainly occurred in the nondurable goods sector, most of April's gains came in high-tech machinery (up 300) and other durable goods (up 200). These advances could be an indication that the nation's export resurgence has finally hit Arizona. As the national semiconductor book-to-bill ratio has shown significant gains in recent months, the outlook for the state's high-tech manufacturing industry is cautiously optimistic. Possible gains in high-tech machinery manufacturing employment could offset anticipated losses in the defense-related aerospace industry.

In April, 500 construction jobs were lost. This was the second consecutive month in which the rate of decline slowed, suggesting the possibility that the industry's decline may bottom out soon. In the near term, however, no rebound is in sight, particularly in the light of rising interest rates and weak activity in building permits.

With the winter visitor exodus which traditionally begins in April, tourist-related trade and services saw seasonal drop-offs in employment. Retail trade lost 300 workers, with the loss distributed among all types of retail establishments. The hotel and lodging industry and health services also saw personnel reductions which totaled 400. In the coming months, this trend will persist as establishments continue to gear down.

The finance, insurance, and real estate industry dropped another 400 workers in April. Since January, 1,000 jobs have been lost as the real estate sector has been plagued by poor conditions in the construction industry and the financial sector suffers through a correction phase resulting from the substantial build-up following the deregulation of financial institutions.

Communications and public utilities trimmed 100 jobs. This trend should continue through the summer months as announced layoffs in the utilities sector take place. The addition of 100 jobs in mining reflected improving health of the industry. Outlook for the industry is bright as copper prices remain high and the supply-demand balance is maintained. Government employment advanced 300 with gains at all levels, except schools.

Arizona's economic outlook calls for moderate growth despite April's gloomy job statistics. If the gains in machinery manufacturing are indicative of a manufacturing rebound, and the construction industry's slump bottoms out, then stronger growth can be expected in the near term.

Rosemary Reardon

Arizona Labor Force and Employment

April 1988 (in thousands)

	ARIZONA					MARICOPA COUNTY					PIMA COUNTY				
				-- Amt Change --					-- Amt Change --					-- Amt Change --	
	Apr.* 1988	Mar. 1988	Apr. 1987	Mar. to Apr.	1987 to 1988	Apr.* 1988	Mar. 1988	Apr. 1987	Mar. to Apr.	1987 to 1988	Apr.* 1988	Mar. 1988	Apr. 1987	Mar. to Apr.	1987 to 1988
TOTAL CIVILIAN LABOR FORCE**	1632.1	1640.4	1618.8	-8.3	+13.3	1013.1	1016.6	1003.3	-3.5	+9.8	312.6	313.4	308.1	-0.8	+4.5
Total Unemployment	88.4	89.7	101.6	-1.3	-13.2	45.0	46.7	53.0	-1.7	-8.0	14.1	14.3	15.4	-0.2	-1.3
Rate	5.4	5.5	6.3	---	---	4.4	4.6	5.3	---	---	4.5	4.6	5.0	---	---
Rate (Sea. Adj.)***	5.5	5.5	6.5	---	---	4.5	4.6	5.4	---	---	4.6	4.6	5.2	---	---
Total Employment	1543.7	1550.7	1517.2	-7.0	+26.5	968.1	969.9	950.3	-1.8	+17.8	298.5	299.1	292.7	-0.6	+5.8

The Above Labor Force Statistics Should Not Be used for Economic Assistance Programs

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT BY PLACE OF WORK

TOTAL WAGE AND SALARY	1423.4	1423.6	1387.1	-0.2	+36.3	935.6	936.3	913.4	-0.7	+22.2	252.0	252.1	245.2	-0.1	+6.8
Manufacturing	188.3	187.7	185.9	+0.6	+2.4	137.5	136.9	134.6	+0.6	+2.9	30.8	30.7	31.0	+0.1	-0.2
Durable Goods	145.8	145.2	145.1	+0.6	+0.7	107.3	106.9	106.2	+0.4	+1.1	25.1	25.1	25.4	+0.0	-0.3
Stone, Clay and Glass	7.5	7.4	8.2	+0.1	-0.7	4.8	4.8	5.5	+0.0	-0.7					
Primary and Fabricated Metals	15.8	15.8	15.8	+0.0	+0.0	10.8	10.8	10.8	+0.0	+0.0					
Primary Metals	7.3	7.3	7.2	+0.0	+0.1										
Fabricated Metals	8.5	8.5	8.6	+0.0	-0.1										
Machinery	65.7	65.4	64.0	+0.3	+1.7	52.2	52.0	51.0	+0.2	+1.2					
Other Durable Goods	56.8	56.6	57.1	+0.2	-0.3	39.5	39.3	38.9	+0.2	+0.6					
Aircraft and Missiles	26.6	26.6	27.7	+0.0	-1.1										
Lumber and Wood Products (Except Furniture)	8.5	8.4	8.3	+0.1	+0.2										
All Other Durable Goods	21.7	21.6	21.1	+0.1	+0.6										
Nondurable Goods	42.5	42.5	40.8	+0.0	+1.7	30.2	30.0	28.4	+0.2	+1.8	5.7	5.6	5.6	+0.1	+0.1
Food and Kindred Products	9.2	9.1	8.8	+0.1	+0.4	6.3	6.1	6.0	+0.2	+0.3					
Apparel	4.9	4.9	4.7	+0.0	+0.2	3.7	3.7	3.2	+0.0	+0.5					
Printing and Publishing	16.3	16.3	16.3	+0.0	+0.0	11.5	11.5	11.6	+0.0	-0.1					
All Other Nondurable Goods	12.1	12.2	11.0	-0.1	+1.1	8.7	8.7	7.6	+0.0	+1.1					
Mining and Quarrying	11.0	11.8	10.5	+0.1	+1.4	0.6	0.6	0.6	+0.0	+0.0	1.7	1.7	1.6	+0.0	+0.1
Copper Mining	8.9	8.8	8.3	+0.1	+0.6										
Other Mining and Quarrying	3.0	3.0	2.2	+0.0	+0.8										
Construction	93.9	94.4	103.3	-0.5	-9.4	62.6	62.9	69.5	-0.3	-6.9	18.6	18.8	19.8	-0.2	-1.2
Trans., Communications, and Public Utilities	74.5	74.5	71.4	+0.0	+3.1	50.5	50.6	48.1	-0.1	+2.4	9.6	9.5	9.4	+0.1	+0.2
Transportation	37.3	37.2	35.3	+0.1	+2.0	26.7	26.7	25.4	+0.0	+1.3	4.8	4.7	4.6	+0.1	+0.2
Communications and Public Utilities	37.2	37.3	36.1	-0.1	+1.1	23.8	23.9	22.7	-0.1	+1.1	4.8	4.8	4.8	+0.0	+0.0
Trade	346.5	347.0	339.3	-0.5	+7.2	233.7	234.0	231.1	-0.3	+2.6	57.2	57.4	55.1	-0.2	+2.1
Wholesale Trade	69.8	70.0	67.7	-0.2	+2.1	54.6	54.4	53.5	+0.2	+1.1	8.3	8.3	7.8	+0.0	+0.5
Retail Trade	276.7	277.0	271.6	-0.3	+5.1	179.1	179.6	177.6	-0.5	+1.5	48.9	49.1	47.3	-0.2	+1.6
General Merchandise and Apparel	42.3	42.4	41.8	-0.1	+0.5	27.1	27.3	27.1	-0.2	+0.0	7.3	7.4	7.2	-0.1	+0.1
Food Stores	45.5	45.6	44.0	-0.1	+1.5	29.0	29.1	28.5	-0.1	+0.5	7.7	7.7	7.3	+0.0	+0.4
Automotive and Service Stations	32.9	32.9	32.1	+0.0	+0.8	20.3	20.3	20.0	+0.0	+0.3	5.6	5.6	5.3	+0.0	+0.3
Eating and Drinking Places	99.9	100.0	97.3	-0.1	+2.6	64.3	64.5	63.0	-0.2	+1.3	18.4	18.5	17.7	-0.1	+0.7
Other Retail Trade	56.1	56.1	56.4	+0.0	-0.3	38.4	38.4	39.0	+0.0	-0.6	9.9	9.9	9.8	+0.0	+0.1
Finance, Insurance, and Real Estate	93.8	94.2	93.9	-0.4	-0.1	74.4	74.8	74.5	-0.4	-0.1	12.4	12.4	12.7	+0.0	-0.3
Services and Miscellaneous	363.1	362.9	344.3	+0.2	+18.8	245.2	245.2	232.4	+0.0	+12.8	68.3	68.3	64.6	+0.0	+3.7
Hotels and Other Lodging Places	41.2	41.3	37.7	-0.1	+3.5	24.1	24.4	21.7	-0.3	+2.4	7.2	7.3	7.0	-0.1	+0.2
Business Services	78.1	78.0	74.4	+0.1	+3.7	62.7	62.6	59.4	+0.1	+3.3	11.1	11.0	10.8	+0.1	+0.3
Health Services	90.4	90.7	85.2	-0.3	+5.2	59.7	59.8	55.8	-0.1	+3.9	19.1	19.3	18.2	-0.2	+0.9
Other Services	153.4	152.9	147.0	+0.5	+6.4	98.7	98.4	95.5	+0.3	+3.2	30.9	30.7	28.6	+0.2	+2.3
Government	251.4	251.1	238.5	+0.3	+12.9	131.1	131.3	122.6	-0.2	+8.5	53.4	53.3	51.0	+0.1	+2.4
Federal	42.6	42.4	42.5	+0.2	+0.1										
State and Local	208.8	208.7	196.0	+0.1	+12.8										
School	123.9	124.3	115.2	-0.4	+8.7										

* Preliminary
** Labor force, unemployment, and employment are reported by place of residence.
*** Normal seasonal variations have been eliminated to reflect underlying economic trends.
NOTE Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics.

Arizona Labor Force and Employment

April 1988 (in thousands)

-- Prepared by Arizona Department of Economic Security, Research Administration (CPS, 1/88)

Nonmetropolitan Counties
Labor Force and Employment
April 1988

	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz
CIVILIAN LABOR FORCE*	14,775	34,500	41,650	12,275	7,925	3,050	5,000
Total Unemployment	2,050	2,825	2,500	1,400	725	325	350
Rate	13.9%	8.2%	6.0%	11.4%	9.1%	10.7%	7.0%
Rate (Seas. Adj.)**	15.5%	8.2%	6.6%	11.3%	9.3%	11.0%	7.6%
Total Employment	12,725	31,675	39,150	10,875	7,200	2,725	4,650
THE ABOVE LABOR FORCE STATISTICS SHOULD NOT BE USED FOR ECONOMIC ASSISTANCE PROGRAMS							
TOTAL WAGE AND SALARY	15,500	25,150	39,175	10,475	5,150	2,950	3,250
Manufacturing	825	1,125	2,825	1,325	200	75	225
Mining & Quarrying	25	100	150	1,350	0	1,600	50
Construction	875	1,150	1,575	600	175	250	125
T.C.P.U.	2,225	1,575	3,025	400	150	50	75
Trade	1,525	5,475	8,925	2,325	1,475	225	1,050
F.I.R.E.	350	650	825	275	125	25	100
Services & Misc.	4,625	4,500	10,150	1,625	875	125	825
Government	5,050	10,575	11,700	2,575	2,150	600	800

	Mohave	Navajo	Pinal	Santa Cruz	Yavapai	Yuma
CIVILIAN LABOR FORCE*	30,575	25,850	37,875	9,650	35,100	48,125
Total Unemployment	1,850	2,700	3,125	750	2,075	8,650
Rate	6.1%	10.4%	8.3%	7.8%	5.9%	18.0%
Rate (Seas. Adj.)**	6.1%	11.1%	8.4%	10.0%	6.5%	17.7%
Total Employment	28,725	23,150	34,750	8,900	33,025	39,475
THE ABOVE LABOR FORCE STATISTICS SHOULD NOT BE USED FOR ECONOMIC ASSISTANCE PROGRAMS						
TOTAL WAGE AND SALARY	22,050	20,175	30,900	9,600	24,275	27,150
Manufacturing	2,950	1,825	3,550	1,200	2,300	1,625
Mining & Quarrying	325	1,225	3,825	0	725	100
Construction	1,600	1,050	1,450	300	2,050	1,425
T.C.P.U.	1,200	1,800	1,250	575	850	1,250
Trade	6,125	4,000	5,550	4,200	6,525	8,300
F.I.R.E.	1,000	400	825	425	1,025	975
Services & Misc.	4,975	4,525	4,550	1,375	5,275	6,275
Government	3,875	5,350	9,900	1,525	5,525	7,200

* Adjusted to the Current Population Survey (CPS) to reflect place of residence.
** Seasonal adjustment not applicable for economic assistance programs.

T.C.P.U. = Transportation, Communications, and Public Utilities
F.I.R.E. = Finance, Insurance, and Real Estate

Prepared in conjunction with the U.S. Department of Labor, Bureau of Labor Statistics.

Arizona Labor Force and Employment for Economic Assistance Programs April 1988

County	Civilian Labor Force	Employment	Unemployment	Rate
Statewide	1,632,097	1,543,656	88,441	5.4%
Apache	14,791	12,729	2,062	13.9
Cochise	34,516	31,679	2,837	8.2
Coconino	41,635	39,143	2,492	6.0
Gila	12,286	10,881	1,405	11.4
Graham	7,932	7,205	727	9.2
Greenlee	3,042	2,723	319	10.5
La Paz	4,990	4,638	352	7.1
Maricopa	1,013,071	968,069	45,002	4.4
Mohave	30,583	28,735	1,848	6.0
Navajo	25,844	23,146	2,698	10.4
Pima	312,647	298,536	14,111	4.5
Pinal	37,884	34,756	3,128	8.3
Santa Cruz	9,657	8,908	749	7.8
Yavapai	35,105	33,036	2,069	5.9
Yuma	48,114	39,472	8,642	18.0

These figures are the only official BLS labor statistics to be used for revenue sharing purposes. They are not designed to be used as economic indicators.

NOTE: Series for Yuma and La Paz counties start January 1983. Data are not comparable to any past series.

Arizona Unemployment Insurance Activities March 1988

	March 1988	February 1988	March 1987	% Change From One Year Ago
Claimants Served*	32,112	30,875	33,289	-3.5%
Avg. Weeks Unemployed**	8.7	8.2	9.3	-6.4%
Benefits Paid*	$13,067,323	$11,030,411	$12,351,264	5.8%
Trust Fund Balance	$419,860,962	$421,045,357	$379,023,515	10.8%

*All Programs **UI Only

Estimated Hours and Earnings of Production Workers in Selected Industries Arizona

INDUSTRY	AVERAGE WEEKLY EARNINGS			AVERAGE WEEKLY HOURS			AVERAGE HOURLY EARNINGS		
	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987
Manufacturing	402.62	402.37	397.20	41.0	41.1	40.0	9.82	9.79	9.93
Aircraft & Missiles	INA	INA	509.64	INA	INA	41.2	INA	INA	12.37
Food & Kindred Prod.	364.81	353.23	405.77	40.4	39.6	42.4	9.03	8.92	9.57
Primary Metals	477.94	472.20	466.34	38.7	38.8	38.1	12.35	12.17	12.24
Machinery	400.88	401.44	374.30	41.2	41.6	39.4	9.73	9.65	9.50
Copper Mining	524.02	525.34	500.61	42.5	42.4	40.7	12.33	12.39	12.30
Construction	429.60	432.89	433.64	36.5	36.5	37.0	11.77	11.86	11.72
Utilities	640.50	632.10	615.76	42.7	42.0	43.0	15.00	15.05	14.32
Retail Trade**	244.53	246.75	243.29	33.0	32.9	32.7	7.41	7.50	7.44
Wholesale Trade	401.15	390.66	382.39	39.6	39.5	39.3	10.13	9.89	9.73

Estimated Hours and Earnings of Production Workers in Selected Industries Maricopa County

INDUSTRY	AVERAGE WEEKLY EARNINGS			AVERAGE WEEKLY HOURS			AVERAGE HOURLY EARNINGS		
	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987
Manufacturing	433.26	429.73	422.91	41.7	41.4	40.9	10.39	10.38	10.34
Construction	447.12	453.36	439.30	36.8	37.1	36.7	12.15	12.22	11.97
Retail Trade**	271.62	269.01	271.15	33.7	33.5	33.6	8.06	8.03	8.07
Wholesale Trade	407.88	400.18	387.44	39.6	39.7	38.9	10.30	10.08	9.96

Estimated Hours and Earnings of Production Workers in Selected Industries Pima County

INDUSTRY	AVERAGE WEEKLY EARNINGS			AVERAGE WEEKLY HOURS			AVERAGE HOURLY EARNINGS		
	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987	Apr.* 1988	Mar. 1988	Apr. 1987
Manufacturing	373.80	370.33	344.58	39.1	38.9	37.7	9.56	9.52	9.14
Copper Mining	544.42	549.54	505.41	42.8	43.0	42.4	12.72	12.78	11.92
Construction	398.04	379.14	372.88	37.2	35.6	37.4	10.70	10.65	9.97
Utilities	580.98	574.56	535.82	42.1	42.0	40.5	13.80	13.68	13.23

* Preliminary.
** Excludes eating and drinking places.

NOTE: These estimates are based on a sample of full- and part-time production and related employees whose payroll and hours are reported for the pay period which includes the 12th of the month. Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics.

Rebasing of the CPI

The U. S. Bureau of Labor Statistics (BLS) has changed the base period of the Consumer Price Index (CPI) to 1982-84 = 100 (from 1967 = 100), starting with the January 1988 release. The conversion of the base period changes only the value of the index. It does not affect the percent change between periods of time except in the case of small rounding differences. The three-year base period has been calculated such that, for all categories within the index, the average of the three years equals 100.

The 1982-1984 period was selected to coincide with updated expenditure weights, which are based on data tabulated from the Consumer Expenditure Survey for 1982, 1983, and 1984. Another advantage of the three-year base period is that it more fully encompasses a complete business cycle. The last previous rebasing of CPI data occurred in February 1971, when the 1967 base was substituted for the former 1957-59 base.

Periodically, BLS makes revisions to the CPI. This year, in addition to the rebasing, other components of the CPI were updated. (See the August 1987 issue of this Newsletter for a complete description of these updates.)

BLS does not prepare indexes for Arizona or its cities; however, the Metropolitan Phoenix CPI prepared by Arizona State University and the Metropolitan Tucson CPI prepared by the University of Arizona have also been rebased to the 1982-84 period.

The following tables show some of the rebased CPI data for Phoenix, Tucson, and the United States.

Rosemary Reardon and
Barbara Keene

METROPOLITAN PHOENIX CONSUMER PRICE INDEX
ALL ITEMS
(1982-84 = 100)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Annual Average
1975	49.3	50.1	51.2	52.5	50.8
1976	52.5	53.0	53.9	54.6	53.5
1977	55.7	57.0	58.2	59.3	57.5
1978	60.6	62.5	64.3	66.1	63.3
1979	68.2	71.8	73.8	76.5	72.6
1980	81.8	81.9	84.0	86.7	83.6
1981	89.4	91.1	93.2	95.2	92.2
1982	96.7	97.2	98.2	96.2	97.1
1983	96.4	98.1	99.7	100.2	98.6
1984	102.1	103.6	105.4	106.1	104.3
1985	108.1	109.8	110.1	110.2	109.6
1986	110.2	110.8	111.4	111.4	111.0
1987	113.9	115.5	116.1	116.6	115.5
1988	117.4				

SOURCE: Arizona State University, Center for Business Research, in co-sponsorship with Valley National Bank.

METROPOLITAN TUCSON CONSUMER PRICE INDEX
ALL ITEMS
(1982-84 = 100)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Annual Average
1983	98.2	99.7	101.0	101.2	100.0
1984	104.1	104.0	106.1	107.4	105.4
1985	111.1	112.6	112.3	112.9	112.2
1986	113.6	113.8	114.2	114.2	114.0
1987	117.3	118.7	119.4	120.4	119.0
1988	120.8				

SOURCE: University of Arizona, Division of Economic and Business Research, in co-sponsorship with First Interstate Bank of Arizona.

U.S. CONSUMER PRICE INDEX
ALL URBAN CONSUMERS
ALL ITEMS

	Jan.	Mar.	June	Sep.	Dec.	Annual Average
1967	32.9	33.0	33.3	33.6	33.9	33.4
1968	34.1	34.3	34.7	35.1	35.5	34.8
1969	35.6	36.1	36.6	37.1	37.7	36.7
1970	37.8	38.2	38.8	39.2	39.8	38.8
1971	39.8	40.0	40.6	40.8	41.1	40.5
1972	41.1	41.4	41.7	42.1	42.5	41.8
1973	42.6	43.3	44.2	45.2	46.2	44.4
1974	46.6	47.8	49.0	50.6	51.9	49.3
1975	52.1	52.7	53.6	54.6	55.5	53.8
1976	55.6	55.9	56.8	57.6	58.2	56.9
1977	58.5	59.5	60.7	61.4	62.1	60.6
1978	62.5	63.4	65.2	66.5	67.7	65.2
1979	68.3	69.8	72.3	74.6	76.7	72.6
1980	77.8	80.1	82.7	84.0	86.3	82.4
1981	87.0	88.5	90.6	93.2	94.0	90.9
1982	94.3	94.5	97.0	97.9	97.6	96.5
1983	97.8	97.9	99.5	100.7	101.3	99.6
1984	101.9	102.6	103.7	105.0	105.3	103.9
1985	105.5	106.4	107.6	108.3	109.3	107.6
1986	109.6	108.8	109.5	110.2	110.5	109.6
1987	111.2	112.1	113.5	115.0	115.4	113.6
1988	115.7	116.5				

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

New Developments

"New Developments" is featured each month as a service to employers and job seekers. It is a compilation of public announcements of the more significant new construction, grand openings, major hirings and layoffs, and other employer events that have special significance for Arizona labor markets. The announcements are paraphrased and otherwise edited from articles published in newspapers and other periodicals from throughout the state. "New Developments" is limited to space available, and no attempt is made to compile an exhaustive list of all such events that have occurred during the month.

COMMUNICATIONS - Vodavi Technology Corp. will be closing a Georgia facility and adding 60 workers to its Scottsdale headquarters. The firm is a designer and marketer of telecommunications equipment. The actions were prompted by recent mergers with ISOTEC Communications Inc. and Executone.

MANUFACTURING - The McKesson Corp. will be building a distribution center on 150 acres in the Estrella development near Goodyear. As the first of a new generation of hub distribution centers, the company's largest center will handle drugs and general merchandise.

The Communications Systems Division of the Unisys Corp. has awarded a $2 million contract to EFData Corp. of Tempe. The contract includes the engineering and manufacture of the adaptive tropscatter data modems used in the U.S. government's AN/TRC-170 Tropscatter Communications System.

The Boeing Commercial Airplane Co. has awarded a $3.5 million contract to the Arizona Division of Aircraft Gear Corp of Chandler. Aircraft Gear will be producing gears, gear shafts, housings, and other components for Boeing 757 and 767 commercial aircraft.

Mulay Plastics Co. of Addison, Illinois, will be opening a manufacturing plant in Casa Grande. The company, which makes plastic housings for televisions, computers, and other products, will begin operations with 35 to 40 employees and expand to 200 to 250 within three years. Located at 1201 West Jefferson Street, the 90,000-square-foot plant should be in operation by July 1, 1988.

CONSTRUCTION and DEVELOPMENT - Construction will begin soon on single-family homes at Marshal Ranch, a 170-acre mixed-use community at 59th Avenue and Cactus in Glendale. The $45 million development will include 642 residential units, offices, and day care and health club services. The homes will be priced in the mid to upper price range. Build-out is planned over the next five years.

The following projects are being planned for the area around Central and Baseline in south Phoenix:

- Plans for a $50-to-$75 million Jesse Owens Memorial Hospital Campus include a 128-bed skilled nursing facility, a 150-bed congregate-care center, a rehabilitation hospital, outpatient services, a 150-bed community hospital, and a branch bank. Already located at the campus is the Jesse Owens Memorial Medical Center, built in 1979 at 325 East Baseline Road.

- Being developed across Baseline Road from the medical campus, Southgate Center will include $38 million of retail, office, apartments, and retirement-housing projects. Construction will start late this year on a 99,000-square-foot retail center an-

chored by a movie theater and an appliance/electronics store.

- A specialty retail and office development is planned for an area bordering the medical campus.

- Smitty's has plans to build a 58,700-square-foot store with an additional 56,000 square feet of retail space this year.

- Also being built in the area is a 104,000-square-foot retail center anchored by Fry's and Walgreens.

- A $4.9 million, five-lane parkway, the Jesse Owens Parkway, will also be built.

Five additional home builders have started construction projects at Val Vista Lakes in Gilbert.

- Cardon Homes is building Anchor Point (107 single-family homes priced from the $80,000s) and Vista Shores (93 homes priced from the low $100,000s).

- Gibson & Gibson is developing Hidden Cove (95 garden homes priced from the $110,000s).

- Inman Homes is building Mission Bay Estates (73 single-family homes).

- L.J. Hooker Homes has already opened its models at The Enclave (54 single-family homes priced from $115,000).

- Ryland Homes is building The Landing (79 single-family homes priced from the $90,000s).

The Phoenix City Council has approved a $10 million plan to turn Central Avenue between McDowell and Camelback roads into a boulevard lined with palm and shade trees and wide granite sidewalks in Southwestern colors and designs. Also included will be distinctive light poles and benches along the sidewalks. Work should begin in June and be completed by September 1989.

Pioneer Homes is developing a 128-lot, single-family home subdivision at the northeast corner of Southern and Higley roads in Mesa. Models ranging in price from the high $70,000s to $100,000 should be open in June.

Construction is under way on Rose Garden Lane Business Park, a 71,000-square-foot project in Deer Valley. Located at the southeast corner of Rose Garden Lane and 20th Avenue, the business park will include three office/warehouse buildings. Completion is expected in August.

Phoenix voters have approved bond propositions totaling about $1 billion. Projects covered by the bond election include the following:

- A new Arizona Museum of Science and Technology, a history museum, and a parking garage will be built during the next three years near Seventh and Washington streets.

- A new library will be built a few blocks south of the existing Central Library at Central Avenue and McDowell Road by 1992.

- The Phoenix Art Museum will expand in 1991 and the Phoenix Little Theater three years later.

- Rental housing will be built or converted for low-income families and senior citizens within two or three years.

- A $21 million international terminal at Sky Harbor International Airport will be completed in about three years. Construction on an additional concourse at Terminal 3 will begin in two years. New hangars for private planes at Phoenix Deer Valley and

Goodyear airports should be completed in 1992.

- The downtown Palace West/Orpheum Theatre will be renovated as a multipurpose facility in 1991 for lectures, concerts, and other community events.

- An indoor aquatic facility at Cave Creek Park will open in about three years.

RETAIL TRADE - Six of 11 Hansen's Quality Foods stores in the Phoenix area were closed as the company filed for protection from creditors under Chapter 11 of the U.S. Bankruptcy Act. About 50 employees have lost their jobs.

The Tempe City Council has approved plans for Mission Centre, a five-story mall to be built on the eastern side of Mill Avenue between Fourth and Second streets. The project will include 75,000 square feet of retail space, 47,000 square feet of office space, and a 1,171-space parking garage. The parking garage should be operating in about a year.

Work has begun on Falcon View Shopping Center at the southwest corner of McKellips and Recker roads in Mesa. The 215,000-square-foot center will include a K-Mart store, a Fry's Food Store, a Goodyear Tire Center, and seven pad sites for fast food and service users.

Ground has been broken on Santa Fe Village in Mesa. The $6 million center, located at the northwest corner of Baseline and Gilbert, will include a multiplex theater facility, Big O Tires, and tentatively a major bank. Construction is expected to take six months.

Chili's Inc. of Dallas has opened its second restaurant in the Valley at 2057 East Camelback. The company is looking at additional Valley sites to open next year. Employing about 90 in each location, the restaurants specialize in burgers, fajitas, and ribs.

HOTELS - Construction has started on a 262-room Hilton Hotel at the Phoenix Airport Center. The hotel, located at the northeast corner of University Drive and the Hohokam Expressway, is expected to open in February of 1989.

TRANSPORTATION - A 7,000-foot runway will be added to the Chandler Municipal Airport. The new runway will run parallel to an existing 4,400-foot runway and is expected to attract corporate-jet traffic. The U.S. Department of Transportation awarded a $3 million grant through the Federal Aviation Administration to cover the cost.

AMUSEMENT - Construction is scheduled to begin by the end of the year on The Arizona Territory, a major theme entertainment park to be built on 1,500 acres of agricultural land on the north side of Grand Avenue at 163rd Avenue in the Valley. The $500 million entertainment campus is expected to employ about 2,000 people and be a major draw for Arizona residents and tourists.

The theme park will include five areas, each with its own theme, rides, demonstrations, and exhibits. The areas will be Saddle Junction, Canyon Country, Mexico Viejo, Memory Lane, and Data World. In addition to the theme park will be a resort conference center, public recreation areas, a 200-acre RV park, golf courses, an 80-acre dude ranch, and a shopping area.

Tigerville U.S.A., a seven-acre domain for tigers and other large cats, will open the first part of 1989 as part of Scottsdale's Horse World, a 356-acre park and equestrian facility being developed east of Pima Road along the Central Arizona Project.

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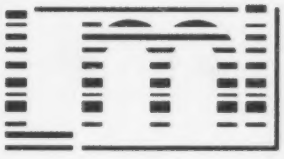

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8/10/88 50465-1

ARIZONA LABOR MARKET INFORMATION NEWSLETTER

Vol. XII No. 7
July 1988

Unemployment Rate

Seasonally Adjusted
May*

ARIZONA	5.8%
Maricopa County	4.7%
Pima County	4.9%
UNITED STATES	5.6%

Consumer Price Index

U.S. - April 1988
Base = 1982-84

Wage Earner/Clerical Worker -	115.7
% Chg. Year Ago	3.7
All Urban -	117.1
% Chg. Year Ago	3.9

Phoenix - 1st Qtr 1988
Base = 1982-84

All Urban -	117.4
% Chg. Year Ago	3.1

Tucson - 1st Qtr 1988
Base = 1982-84

All Urban -	120.8
% Chg. Yr. Ago	3.0

*Preliminary

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Arizona Department of Economic Security
— Moving People Toward Self-Sufficiency

1987 Per Capita Personal Income

With per capita personal income of $14,030, Arizona ranked 29th among all states in 1987, according to the U.S. Bureau of Economic Analysis. This was Arizona's first drop in rank since 1981 when the state placed 34th and then climbed to 26th place by 1986. In 1987, Connecticut maintained its first-place rank for the second consecutive year with per capita personal income of $20,980, well above second ranked New Jersey with $20,067. Mississippi had the lowest per capita personal income with $10,204, less than half of Connecticut's level.

Among the states in the Southwest, Far West, and Rocky Mountain regions, only California, Nevada, Colorado, and Washington posted per capita personal income figures greater than Arizona's in 1987. As recently as 1983, Arizona only ranked higher than New Mexico, Idaho, Montana, and Utah when compared to other western states. Since then, Arizona has eclipsed Texas, Wyoming, and Oregon. Consensus forecasts indicate that earnings growth in Arizona is anticipated to exceed growth in Colorado and California in 1988 and 1989; but, because per capita personal income for these states is much greater, it is unlikely that Arizona will pass them in rank.

In terms of the growth of per capita personal income, Arizona was 42nd, ahead of only New Mexico, Oklahoma, Texas, Utah, Wyoming, Alaska, Arkansas, and Louisiana. Arizona tallied a 2.9 percent growth rate, while the national average was 4.8 percent. In 1986, the state's growth was slightly above the national average, 5.3 percent compared to 5.2 percent. Only five states had stronger growth in 1985 as Arizona grew at a 7.2 percent clip.

This slowdown in growth is not unusual in comparison to other states. Slower rates of per capita personal income growth were registered by 37 states in 1987. The deceleration in growth occurred in all areas of the country. Most of the dropoff was attributed to slowdowns in earnings growth in finance, retail trade, services, and construction. In Arizona, the slowdown was primarily the result of the large decline in construction earnings; nevertheless, earnings growth was languid in all industries.

While the slowdown of the rate of growth is of some concern, the fact that Arizona per capita personal income as a percent of the national average has fallen is more important, particularly if it is an indication that Arizona's standard of living is declining relative to other states. Arizona's per capita personal income has continually been below the national average. As a percent of the national, the state peaked at 95 percent in 1971 and 1972 and fell to a low of 88 percent in 1977.

Rosemary Reardon

DEFINITIONS:

Personal income is income received by persons from all sources, including production, government and business transfer payments, and government interest. Personal income is the sum of earnings (wage and salary disbursements, other labor income, and proprietors' income), rental income, dividends, interest, and transfer payments less personal contributions for social insurance. Personal income is measured before the deduction of income taxes and is reported in current dollars (no adjustment is made for price changes).

Per capita personal income is the annual total personal income of residents divided by resident population as of July 1.

PER CAPITA PERSONAL INCOME--1987

Rank		Income	% of U.S. Average	Rank		Income	% of U.S. Average
1	Connecticut	$20,980	137	26	Iowa	$14,191	93
2	New Jersey	20,067	131	27	Georgia	14,098	92
3	Massachusetts	18,929	123	28	Vermont	14,061	92
4	New York	18,055	118	29	ARIZONA	14,030	91
5	Alaska	17,886	117	30	Oregon	13,887	91
6	Maryland	17,722	116	31	Indiana	13,834	90
7	California	17,661	115	32	Texas	13,764	90
8	New Hampshire	17,133	112	33	Maine	13,720	89
9	Illinois	16,347	107	34	North Carolina	13,155	86
10	Virginia	16,322	106	35	North Dakota	13,061	85
11	Delaware	16,238	106	36	Wyoming	12,759	83
12	Nevada	15,958	104	37	Tennessee	12,738	83
13	Colorado	15,862	103	38	Oklahoma	12,520	82
14	Minnesota	15,783	103	39	South Dakota	12,511	82
15	Washington	15,444	101	40	Montana	12,255	80
16	Hawaii	15,366	100	41	Kentucky	11,950	78
17	Rhode Island	15,355	100	42	South Carolina	11,858	77
--	UNITED STATES	15,340	100	43	Idaho	11,820	77
18	Michigan	15,330	100	44	Alabama	11,780	77
19	Florida	15,241	99	45	New Mexico	11,673	76
20	Pennsylvania	14,997	98	46	Louisiana	11,362	74
21	Kansas	14,952	97	47	Arkansas	11,343	74
22	Wisconsin	14,659	96	48	Utah	11,246	73
23	Ohio	14,543	95	49	West Virginia	10,959	71
24	Missouri	14,537	95	50	Mississippi	10,204	67
25	Nebraska	14,341	93				

ARIZONA'S PER CAPITA PERSONAL INCOME

	Income	Percent Change	% of U.S. Average	Rank
1987	$14,030	2.9	91	29
1986	13,640	5.3	93	26
1985	12,951	7.2	93	27
1984	12,077	---	92	28

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

The 1988 MICRO OIS of Arizona

The Occupational Information System (OIS) of Arizona has released the 1988 version of its microcomputer database--the MICRO OIS. The OIS project is designed to serve vocational planners, administrators, and evaluators; career counselors; and others. Several new modules were added to the MICRO OIS this year, and additional ones are planned for next year. Modules now included or planned for implementation in the MICRO OIS during the next year are:

- The Interest Inventory module incorporates the United States Employment Service (USES) Interest Inventory, which may be taken directly on the computer or on paper. After entering raw scores, the computer prints out an evaluation for the client.

- The SOC Career Profile module provides one-page printouts for about 750 occupations based on Standard Occupational Classification (SOC) codes.

- The Supply-Demand module provides information relating to the labor market. These printouts may be prepared for any county or statewide. Demand and training information is grouped into 228 clusters for easy retrieval. The four parts of the supply-demand printout are: (a) employment forecast data, (b) training completer data from secondary schools, four-year colleges, community colleges, private schools, and community-based organizations, (c) Unemployment Insurance, Job Service, and apprenticeship data, and (d) wage survey data.

- The selected Search module produces lists at the county or statewide level relating to largest occupations, training areas having the most completers, occupations of Job Service placements having the highest wage, or other criteria. Coverage is for the latest full calendar or school year.

- The Job Match module permits individuals to rate themselves on the basis of 16 characteristics and to state educational level objectives. These responses are then evaluated against a list of 280 occupations, and the 25 occupations which match most closely are printed out.

- The Vocational Evaluation module permits entry of client information including General Education Development (GED) codes, aptitudes, temperaments, interests, training time, physical demands, and work environments. It scans more than 12,000 Dictionary of Occupational Titles (DOT) codes and lists occupations that have these characteristics. A planned modification will permit use in skill transferability, which is useful in working with displaced workers.

- The Occupational Characteristics module permits entry of a more limited range of information about an individual including GED codes, aptitudes, training time, and limited information on physical demands and work environment. It then searches through 750 SOC codes and selects occupations which match the entered criteria.

- The Plant Impact module is designed to assess the training needs of a new plant. Given the number of people to be employed and the two-digit Standard Industrial Classification (SIC) code, the module will print a list of occupations and number of employees in each occupation that might be expected to be employed.

INFORMATION AVAILABLE IN THE MICRO OIS*

		Available Statewide	Available by County
1988	Estimated Employment**	Yes	Yes
1992	Projected Employment**	Yes	Yes
1988-92	Annual Replacement Demand**	Yes	Yes
1988-92	Annual Growth Demand**	Yes	Yes
1988-92	Annual Job Openings**	Yes	Yes
1986-87	Public Secondary Enrollments/Completers	Yes	Yes
1986-87	Proprietary Completers	Yes	Yes
1986-87	Community-based Organization Completers	Yes	Yes
1986-87	Degrees and Certificates--Three Years and Less	Yes	Yes
1986-87	Degrees--Four Years and More	Yes	Yes
1987	Job Training Partnership Act	No	No
1987	Job Service Job Openings	Yes	Yes
1987	Job Service Openings/Applicants Ratio	Yes	Yes
1987	Job Service Average Wage for Placements	Yes	Yes
1987	Unemployment Insurance Claimants	Yes	Yes
1987	Apprenticeship Completers	Yes	Yes
1987	Small Employer Wage Survey Data--Maricopa, Pima	No	Yes
1987	Large Employer Wage Survey Data--Maricopa, Pima, and Balance of State	Yes	Yes

* Employment and demand data are by occupation based on the Occupational Employment Statistics (OES) code; education and training data by vocational training area based on the Classification of Instructional Programs (CIP) code; and Job Service, Unemployment Insurance, and Apprenticeship data by occupation based on the Dictionary of Occupational Titles (DOT) code.

** Includes self-employment.

- The School Listings module lists institutions that offer training by Classification of Instructional Programs code in a given county. The institutions include secondary school districts, community colleges, four-year colleges, private schools, and community-based organizations.

- The Occupation-Industry module permits entry of an Occupational Employment Statistics (OES) code and prints out the percent distribution of employment across two-digit SIC classifications.

- The GATB Evalution module uses raw General Aptitude Test Battery scores to prepare a printout integrated with the USES Interest Inventory which shows an individual's Occupational Aptitude Pattern (OAP) levels.

The MICRO OIS is currently installed at over 50 sites in Arizona. It is designed as a stand-alone system that runs on IBM-compatible microcomputers with at least 13 megabytes of hard disk space and dBASEIII+ software. The MICRO OIS, along with installation and training, is available at no cost to secondary schools and other nonprofit organizations in Arizona.

Besides the MICRO OIS, there are two other components to the OIS project. The OIS Users' Manual is used in vocational planning and evaluation and career counseling. Designed for use with either the MICRO OIS or the OIS Users' Manual is a series of OIS hard-copy reports of supply-demand and other information as listed in the accompanying table.

The OIS project is mandated by the Job Training Partnership Act and the Carl Perkins Act. The MICRO OIS project was developed by the National Occupational Information Coordinating Committee. Funding for the OIS in Arizona has been provided primarily by Vocational Education in the Arizona Department of Education, but also by the Arizona State Occupational Information Coordinating Committee (ASOICC) and the DES Research Administration. Development and implementation are being carried out through ASOICC. For further information, contact Hugo H. Soll, Ph.D., Manager, OIS of Arizona, Site Code 733A, P. O. Box 6123, Phoenix, Arizona 85005, (602) 255-3680.

Hugo H. Soll, Ph.D.

OIS Releases New Job Service Reports

The Occupational Information System (OIS) of Arizona has just released reports covering applicants and openings listed with the Job Service in 1987. The following reports are arranged in Dictionary of Occupational Titles (DOT) code sequence.

- OIS Report 88-7-ST: 1987 Job Service Data--Statewide.
- OIS Report 88-7-MP: 1987 Job Service Data--Maricopa and Pima Counties.
- OIS Report 88-7-BOS: 1987 Job Service Data--All Counties Except Maricopa and Pima.

The related Standard Occupational Classification (SOC) code and OIS cluster code are included for each DOT occupation. Using these codes, additional information may be obtained through the MICRO OIS. A one-page career profile printout may be obtained for the SOC occupation which includes the specified DOT occupation. In addition, a supply-demand report may be obtained for the OIS cluster which includes the specified DOT code.

For further information, contact Hugo H. Soll, Ph.D., Manager, OIS of Arizona, Site Code 733A, P.O. Box 6123, Phoenix, Arizona 85005, (602) 255-3680.

Hugo H. Soll, Ph.D.

LMI Publications-- Hot off the Press

The following recently revised publication prepared by the DES Research Administration can be ordered from the address on the back of this newsletter or by calling (602) 255-3871. One copy will be sent at no charge. Multiple copies are available at a nominal charge to help cover the cost of printing. Other DES offices can order directly from DES Supply.

The latest edition of Job Bank Wages includes hourly wage rates (low, average, and high) that were offered to applicants placed in jobs through the Arizona Department of Economic Security's Job Service Job Bank in 1987. The data are listed alphabetically by occupation in occupational categories and arranged geographically by statewide, county, and city. Since many of those job seekers were entering the labor force for the first time, this publication is a good source of entry-level wage data. This book is also one of the few sources for wage data in the nonmetropolitan areas of the state.

The Arizona Labor Force in May

The ranks of the unemployed in Arizona swelled by 4,800 in May, pushing the unemployment rate up to 5.8 percent. Most of the increase in unemployment was the result of the seasonal downturn in agriculture and students entering the job market at the close of the school year. The U.S. unemployment rate jumped to 5.6 percent as a result of the influx of students looking for temporary jobs or permanent positions after graduation.

May was a balancing act between seasonal forces which resulted in a decline of 1,900 in wage and salary employment. Anticipated seasonal downturns appeared in tourist-related services employment as the remaining winter visitors left the state. Seasonal downturns were also apparent in school employment as the school year wound down. Offsetting these dips, construction revealed its summer employment spurt; however, the increase was smaller than usual.

Services employment, plagued by seasonal drops, fell by 2,000 during May. The fall was dominated by the loss of 700 jobs in the hotel and lodging industry, a consequence of the conclusion of the tourism season. Health services realized its first decline in over a year losing 300 jobs, and the sector classified as "other services" plunged by 1,400, the largest decline since the summer of 1986. Business services again displayed healthy growth, adding 400 new employees.

School employment dropped by 300 in May, beginning the annual summer retrenchment which should continue through July. Despite the decline in school employment, government employment enjoyed continued growth with an increase of 700 workers.

Construction employment surged by 800 in May. This gain creates the illusion that the industry has reached a recovery phase, but this is not the case. Gains in construction employment during the summer months are typical, even during economic downturns. The addition of 800 workers is subpar when compared to previous years. The average April-to-May increase over the last ten years is 1,300. Construction employment should continue to show gains through next month before fading again. No turnaround is in sight for the industry before next year.

Boosted by the addition of 400 jobs, the manufacturing industry sustained a fourth consecutive month of growth. One thousand manufacturing jobs have been added to the state's economy since January, but over-the-year growth in this sector is a modest 1.3 percent. Stronger growth is anticipated later in the year in spite of continued layoffs in the troubled aircraft and missiles industry.

The transportation, communications, and public utilities industry shrank by 1,000 as a result of seasonal and economic layoffs in the public utilities sector. The finance, insurance, and real estate industry continued its downturn, losing another 600 jobs in May. Unfortunately, these declines cannot be attributed to seasonal factors but are a continuation of a trend which began last summer. This sector is not expected to rebound until the construction industry recovers.

The coming months call for continued slow growth in jobs and slightly higher unemployment rates. Employment gains in healthy industries, such as services and trade, will be offset by losses in the ailing construction and aerospace industries.

Rosemary Reardon

Arizona Labor Force and Employment

May 1988 (in thousands)

	ARIZONA			-- Amt Change --		MARICOPA COUNTY			-- Amt Change --		PIMA COUNTY			-- Amt Change --	
	May.* 1988	Apr. 1988	May. 1987	Apr. to May.	1987 to 1988	May.* 1988	Apr. 1988	May. 1987	Apr. to May.	1987 to 1988	May.* 1988	Apr. 1988	May. 1987	Apr. to May.	1987 to 1988
TOTAL CIVILIAN LABOR FORCE**	1628.6	1635.7	1620.0	-7.1	+8.6	1012.7	1015.2	1005.7	-2.5	+7.0	310.4	313.0	307.8	-2.6	+2.6
Total Unemployment	94.0	89.2	101.2	+4.8	-7.2	46.6	45.4	52.0	+1.2	-5.4	14.7	14.3	14.7	+0.4	+0.0
Rate	5.8	5.5	6.2	---	---	4.6	4.5	5.2	---	---	4.7	4.6	4.8	---	---
Rate (Sea. Adj.)***	5.8	5.6	6.4	---	---	4.7	4.6	5.3	---	---	4.9	4.7	5.0	---	---
Total Employment	1534.6	1546.5	1518.8	-11.9	+15.8	966.1	969.8	953.7	-3.7	+12.4	295.7	298.7	293.1	-3.0	+2.6

The Above Labor Force Statistics Should Not Be used for Economic Assistance Programs

NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT BY PLACE OF WORK															
TOTAL WAGE AND SALARY	1421.3	1423.2	1389.6	-1.9	+31.7	936.0	935.8	914.2	+0.2	+21.8	250.2	251.5	245.4	-1.3	+4.8
Manufacturing	188.7	188.3	186.2	+0.4	+2.5	138.2	137.5	134.7	+0.7	+3.5	30.3	30.7	31.1	-0.4	-0.8
Durable Goods	146.0	145.9	145.5	+0.1	+0.5	107.7	107.3	106.2	+0.4	+1.5	24.6	25.1	25.6	-0.5	-1.0
Stone, Clay and Glass	7.5	7.5	8.1	+0.0	-0.6	4.8	4.8	5.4	+0.0	-0.6					
Primary and Fabricated Metals	15.9	15.9	15.9	+0.0	+0.0	10.8	10.8	10.8	+0.0	+0.0					
Primary Metals	7.3	7.3	7.2	+0.0	+0.1										
Fabricated Metals	8.6	8.6	8.7	+0.0	-0.1										
Machinery	65.7	65.7	63.9	+0.0	+1.8	52.3	52.2	50.8	+0.1	+1.5					
Other Durable Goods	56.9	56.8	57.6	+0.1	-0.7	39.8	39.5	39.2	+0.3	+0.6					
Aircraft and Missiles	26.3	26.6	27.7	-0.3	-1.4										
Lumber and Wood Products (Except Furniture)	8.7	8.5	8.5	+0.2	+0.2										
All Other Durable Goods	21.9	21.7	21.4	+0.2	+0.5										
Nondurable Goods	42.7	42.4	40.7	+0.3	+2.0	30.5	30.2	28.5	+0.3	+2.0	5.7	5.6	5.5	+0.1	+0.2
Food and Kindred Products	9.3	9.2	8.7	+0.1	+0.6	6.3	6.3	5.9	+0.0	+0.4					
Apparel	4.8	4.8	4.6	+0.0	+0.2	3.7	3.7	3.3	+0.0	+0.4					
Printing and Publishing	16.3	16.2	16.3	+0.1	+0.0	11.5	11.5	11.6	+0.0	-0.1					
All Other Nondurable Goods	12.3	12.2	11.1	+0.1	+1.2	9.0	8.7	7.7	+0.3	+1.3					
Mining and Quarrying	12.0	11.9	11.4	+0.1	+0.6	0.6	0.6	0.6	+0.0	+0.0	1.8	1.7	1.6	+0.1	+0.2
Copper Mining	9.0	8.9	8.4	+0.1	+0.6										
Other Mining and Quarrying	3.0	3.0	3.0	+0.0	+0.0										
Construction	94.7	93.9	104.1	+0.8	-9.4	63.3	62.7	70.3	+0.6	-7.0	18.5	18.5	19.8	+0.0	-1.3
Trans., Communications, and Public Utilities	73.4	74.4	71.2	-1.0	+2.2	50.4	50.5	48.3	-0.1	+2.1	9.6	9.6	9.5	+0.0	+0.1
Transportation	37.2	37.2	35.6	+0.0	+1.6	26.7	26.7	25.5	+0.0	+1.2	4.7	4.8	4.8	-0.1	-0.1
Communications and Public Utilities	36.2	37.2	35.6	-1.0	+0.6	23.7	23.8	22.8	-0.1	+0.9	4.9	4.8	4.7	+0.1	+0.2
Trade	346.5	346.8	338.3	-0.3	+8.2	234.0	234.0	229.8	+0.0	+4.2	57.1	57.2	55.1	-0.1	+2.0
Wholesale Trade	69.6	69.9	67.4	-0.3	+2.2	54.8	54.7	53.5	+0.1	+1.3	8.2	8.2	7.8	+0.0	+0.4
Retail Trade	276.9	276.9	270.9	+0.0	+6.0	179.2	179.3	176.3	-0.1	+2.9	48.9	49.0	47.3	-0.1	+1.6
General Merchandise and Apparel	42.3	42.3	42.0	+0.0	+0.3	27.0	27.1	27.2	-0.1	-0.2	7.3	7.3	7.2	+0.0	+0.1
Food Stores	45.6	45.5	43.3	+0.1	+2.3	29.2	29.0	27.8	+0.2	+1.4	7.7	7.7	7.3	+0.0	+0.4
Automotive and Service Stations	32.9	32.9	32.2	+0.0	+0.7	20.4	20.3	20.0	+0.1	+0.4	5.6	5.6	5.4	+0.0	+0.2
Eating and Drinking Places	99.5	99.7	97.0	-0.2	+2.5	64.0	64.2	62.3	-0.2	+1.7	18.2	18.4	17.7	-0.2	+0.5
Other Retail Trade	56.6	56.5	56.4	+0.1	+0.2	38.6	38.7	39.0	-0.1	-0.4	10.1	10.0	9.7	+0.1	+0.4
Finance, Insurance, and Real Estate	93.3	93.9	94.5	-0.6	-1.2	74.1	74.4	75.0	-0.3	-0.9	12.4	12.5	12.7	-0.1	-0.3
Services and Miscellaneous	360.8	362.8	344.8	-2.0	+16.0	243.8	245.1	232.5	-1.3	+11.3	67.0	68.0	64.4	-1.0	+2.6
Hotels and Other Lodging Places	40.3	41.0	37.7	-0.7	+2.6	23.1	24.0	21.3	-0.9	+1.8	6.9	7.1	6.8	-0.2	+0.1
Business Services	78.5	78.1	75.5	+0.4	+3.0	63.1	62.7	60.4	+0.4	+2.7	10.9	11.1	10.9	-0.2	+0.0
Health Services	90.5	90.8	85.5	-0.3	+5.0	59.6	59.8	56.0	-0.2	+3.6	19.3	19.3	18.2	+0.0	+1.1
Other Services	151.5	152.9	146.1	-1.4	+5.4	98.0	98.6	94.8	-0.6	+3.2	29.9	30.5	28.5	-0.6	+1.4
Government	251.9	251.2	239.1	+0.7	+12.8	131.6	131.0	123.0	+0.6	+8.6	53.5	53.3	51.2	+0.2	+2.3
Federal	42.7	42.5	43.3	+0.2	-0.6										
State and Local	209.2	208.7	195.8	+0.5	+13.4										
School	123.5	123.8	115.0	-0.3	+8.5										

* Preliminary
** Labor force, unemployment, and employment are reported by place of residence.
*** Normal seasonal variations have been eliminated to reflect underlying economic trends.
NOTE Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics.

-- Prepared by Arizona Department of Economic Security,Research Administration (CPS, 1/88)